FRONT LOAD WASHING MACHINE

Service Manual

Suited model:

PFL1466W-U

Features

300mm diameter porthole, door may be open at a 180 degrees.

Class-A energy-saving; Homocentric tubs with higher energy efficiency
Multi-gear speed controller
Unique gasket design featuring no residual water hidden inside
Delay time adjustive
Large wash load capacity 6kg,Europe standard AAB

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PRODUCT INTRODUCTION

PFL1466W-U

It represents HMS series appearance with big window 180 opening window 1400rpm spin speed.Spin speed is adjustive from 400 to 1400 rpm,and alse exclude spin(indicate"0") temprature is also adjustive,you can alse choose cold water. it's controlled by computer.

FEATURES

300mm diameter porthole, door may be open at a 180 degrees.

Facilitate view of wash process, facilitate unloading and easy to use with large porthole.

Multi-gear speed controller

According to different costuming you can slect corresponding spin speed from 400 to 1400 rpm.

Unique gasket design featuring no residual water hidden inside.

By the unique gasket washing machine can left no residual water hidden between outer drum and board.

SPECIFICATION

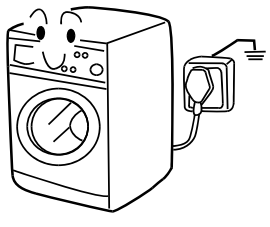
	Proposal	2007	New Sensor
	Front load washing machines		PFL1466W-U
	Brand position center upper frame of door / chromed sticker		
	Model number serigraphy right top corner control panel		
	On white: silver / On silver : black or dark grey		
1.	**Product identification**		
	Description of appliance		Washing machine
	Type of appliance (FS = standing, BI = built-in)		**FS**
	Supplier own brand		Haier
	Supplier bar code	EAN	
	Mares computer code		
	Commercial Brand / Model		
	Commercial bar code	EAN	
2.	**Key-Features**		
	Energy efficiency class		**A**
	Washing performance class		**A**
	Spin efficiency class		**B**
	Programs	n°	**11**
	Capacity	Kg	**Max. 6**
	Spin speed ***(max. / optional)***	rpm	1400-0
	Noise level	dB(A)	71
	Energy consumption per wash circle *	kWh	1.14
	Water consumption*	l	**<49**
	Residual dampness *(spin result)*	%	56%
	Spin speed selector switch *(steps)*	rpm	1400/1200/1000/800/600/400/0
	Spin speed variator *(stepless)*	rpm	
	Adjustable thermostat *(water temp. adjust from - to)*	°C	80 - ❄
	Drum capacity dry laundry / water	kg / l	6 / 49
	Auto water level adjust *(depending on volume of filled in laundry)*	*AWL*	
	Washing time (max.)	min	178(TBC)
	Washing temperatures *(program-controlled)*	°C	30/40 / 60 / 80
	Certification's (**CE** / ISO 9001 / ISO 9002)		CE / ISO 9001
	Approvals (VDE/GS / TÜV/GS / IMQ)		TÜV/GS (Rhl.)
	* EN 60456 *(60°C cycle, full load without pre-wash)* ▯ = *COLD*		
3.	**Basics data**		
	Unit dimensions (H x W x D)	cm	85 x 56.5 x 59.5
	Net weight	kg	70
	Voltage/frequency	V/Hz	220-240V~50Hz
	Input power / main fuse (intensity)	W / A	2000/10
	Work top / removable		/
	Control **M** = electromechanical, **E** = electronic, **F** = fuzzy		E
	Drum **S** = stainless steel / **Z** = zinc coated		S
	Tub **P** = Polyprop./ **S** = stainless steel		P
	Door:		
	aesthetic (**R** = round, **Y** = big eye, **Q** = square)		R
	Diameter	cm	30
	Outer door frame **S**= stainless steel / **M** = metal / **P** = plastic		P
	Inner door **G**= glass / **P**= plastic		G
	Detergent compartments	n°	3
	Removable compartment for liquid detergent		-

	Delay timer *(from - to)*	h	0.5-24
	Self cleaning suds pump		●
	Water inlet hose		●
	Water drain hose		●
	Adjustable feet	n°	4
4.	**Safety systems**		
	Auto door lock	*ADL*	●
	Motor overheating protection	*MOP*	●
	No heating without water	*NHW*	●
	Auto water cool-down *(before drain 80°C boiled water)*	*AWC*	●
	Water return protection	*WRP*	
	Acqua Stop kit		-
	Child protection		●
5.	**Programs**		
	1) Strong action /cotton cycles	n°	●
	2) Normal action / synthetics	n°	●
	3) Delicate action / wooll cycles	n°	●
	Pre-wash / wash		●
	Quick wash / super quick wash		●/-
	Rinse / soften		●/●
	Delicate / hand wash		-
	Wool / cashmere		●/●
	Soak / spin		●/●
	Drain		●
	Easy ironing		●
	Optional function keys (additional program settings)		
	ON/OFF button		●
	Half load		-
	Fussy		-
	Spin exclusion		-
	Spin speed selection	rpm	●
	High water level		-
	No Soak		-
	Rinse stop		-
	Delicate		-
	Cold wash		●
	Delay Timer		●
	Extra Rinse		-
	Load Select		-
	Easy Ironning		-
	Temperature selection		●
	5kg wash		-
	Prewash		●

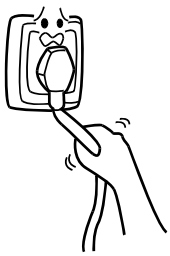
REMAK: " ● " Signify the washing machine has this function.
" - "Signify the washing machine doesn't have this function

Matters Needing Attention

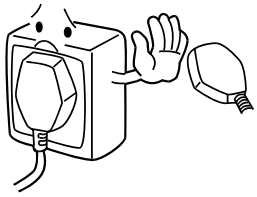
1.A separate earthed socket is required for the power supply. The washing machine must be positioned so that the plug is accessible.



2. Hold the plug and not the electric cable when unplugging the washing machine.



3.Fuses in the power circuit should be rated for 15A. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

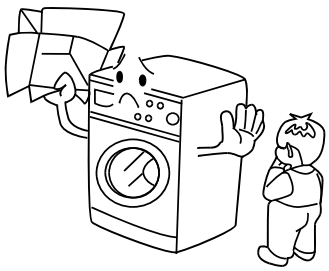


4. Do not touch or use the washing machine bare-footed or when the hands or feet are wet.

5.Do not use flammable detergent or dry clean ing agent; do not use flammable spray in close vicinity to the washing machine; do not remove or insert the plug in the presence of flammable gas.

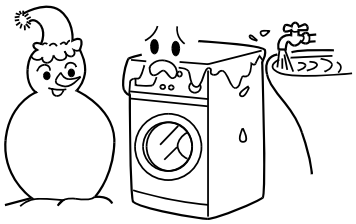
6. The door of the washing machine will become hot during the heating process. Avoid contact with the door during the heating process. For safety, keep children away from the washing machine.

7.Keep children away from the packing materials after unpacked.

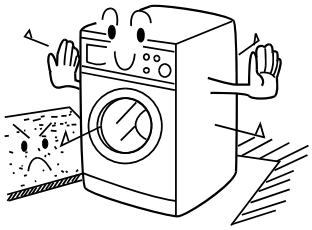


Matters Needing Attention

8.The washing machine should not be installed outdoors or in a damp place. In the event of water leakage or splashes allow the machine to dry naturally.

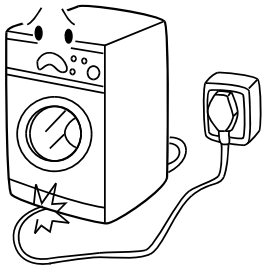


9.The carpet must not obstruct the ventilation openings in the base of the washing machine.



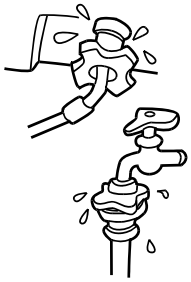
10.Keep away from heat sources and direct sunlight to prevent plastic and rubber components from aging.

11.During installation, ensure that the electric cable is not trapped by the washing machine and avoid damage to the electric cable.



During Use

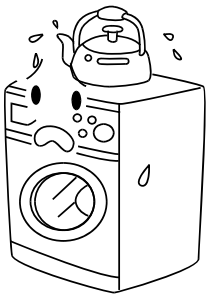
1. Before use, check the joints of the filling hose, the tap and the drainage hose for possible problems from water pressure fluctuations. If joints are loose or there is leakage, turn off the tap and repair. Do not use the washing machine until the hoses are properly fixed.



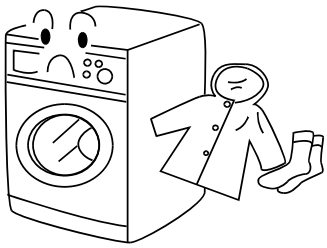
Keep the door slightly open when the washing machine is not in use to prevent formation of odors; do not cover the washing machine with plastic cover so that inside dampness cannot be kept in.

Matters Needing Attention

3. Do not place heavy, heating source or wet articles on the top of the washing machine.



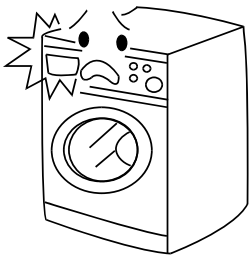
4. Do not hot wash foam rubber or sponge-like materials.



5. Before washing, do up zippers, buttons and clothes straps and put small articles, such as socks, laces or bras, into a washing bag or a pillow.

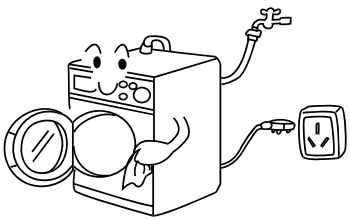
Steel wires in bras will pop out during washing; never wash bras containing steel wires.

6. Do not open the detergent distribution drawer during the wash cycle..



7. The door is fitted with a self-lock device and will not open until 2~3 minutes after the washing machine stops. Do not force the door open. Do not open the door if water level can reach the porthole.

8. After each wash program, turn off the tap to prevent leakage; and unplug the washing machine and wipe clean the lower part of the porthole.



Installation

● Remove all the packing materials (including the foam base) to prevent vibration during use, as shown in Fig. 1.
Upon opening of the package, water drops may be seen on the plastic bag and the porthole. This is normal phenomenon resulting from water test in the factory

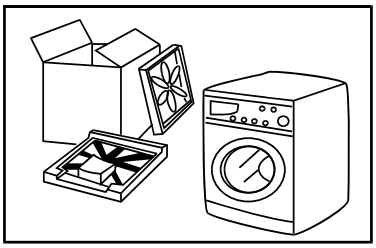


Fig.1

● Dismantle the packing bolts as shown in Fig. 2.

The packing bolts are designed for clamping anti-vibration components inside of the washing machine during the transportation process.

Beforeuse:

1. Remove the back plate;
2. Remove the three packing bolts on the back plate and take out the rubber hose;
3. Replace the back plate;
4. Fill the holes left by the packing bolts with plastic plugs.

(Attention: The packing bolts and rubber hose should be kept in a safe place for later use)

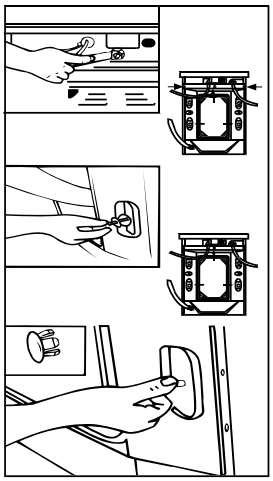


Fig.2

● Adjusting the washing machine

There are adjustable feet under the bottom of the washing machine. Before use, the washing machine should be adjusted, as shown in Fig. 3, so that it is level.

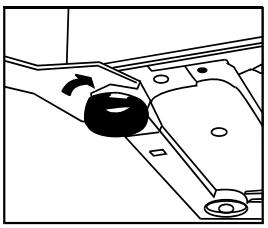
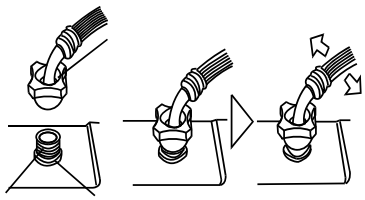


Fig.3

Installation

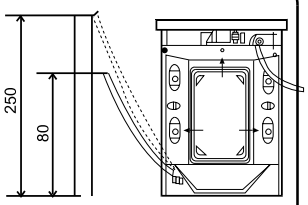
Joining the Inlet Hose to the Washing Machine

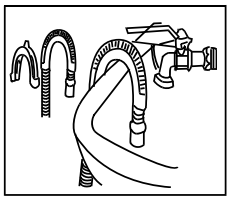
Connect the nut on the inlet hose to the connector on the water valve.



Connect of water inlet valve

- The height of the drainage outlet must be 80-100cm. To prevent the drainage hose from dropping off, fix it to the drainage hose clip at the back of the washing machine.
- Use the drainage holder to keep the end of the drainage hose retained and to prevent the outflow of water. It is recommended that drainage hose extensions not be used; if an extension is needed, please consult a serviceman. The additional hose should be no more than 250cm (overextended hoses could lead to siphonage). Note: The drainage hose should not be submerged in water and should be securely fixed and leak-free.The appliance is to be connected to the waster mains using new hose-sets and that old hose-sets should not be reused.





Connecting to the Power Supply

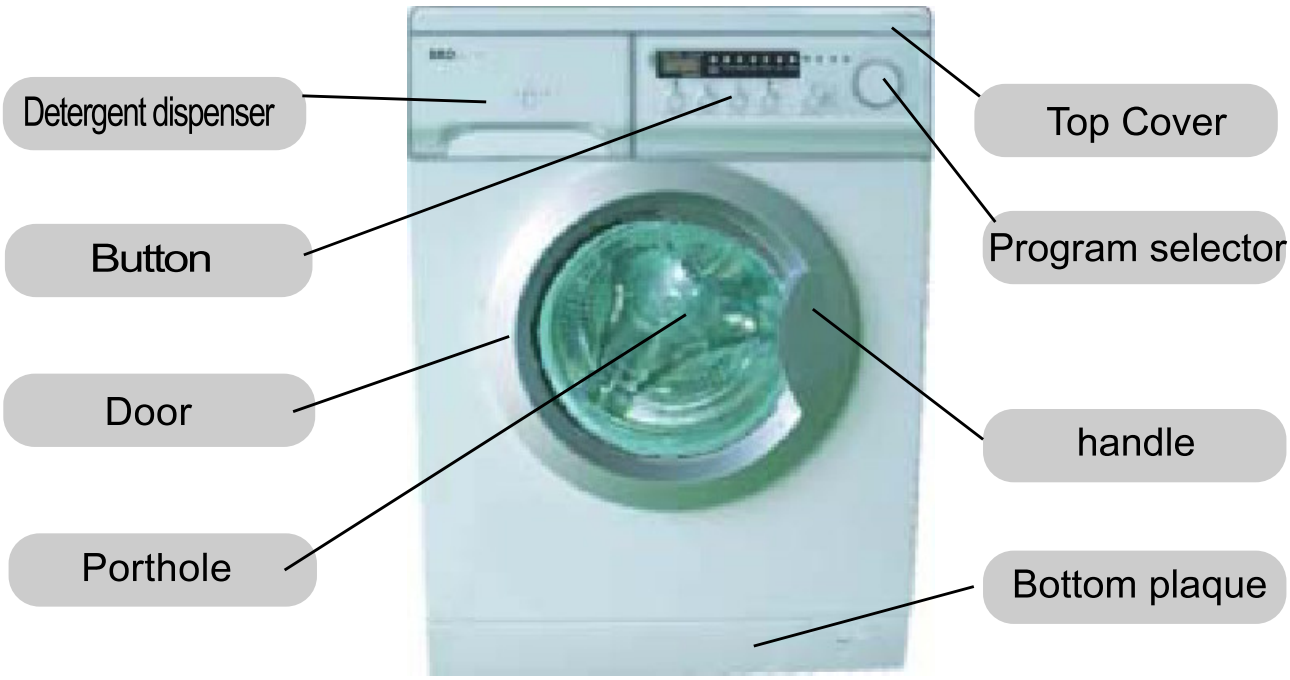
Before connecting to the power supply, check:

- The socket is adequate for the maximum power of the washing machine (For safety, fuses in the power circuit should be rated for no less than 15A).
- The voltage should meet the requirement.
- The power outlet should be capable of accepting the washing machine plug. The washing machine must be earthed before use.
- Supplementary earth cable should not be necessary if the socket is connected to the earth
- Supplementary earth cable shoulde be installed on the upper back of the washing machine andconnected to an earth if the power supply socket has no earth connection

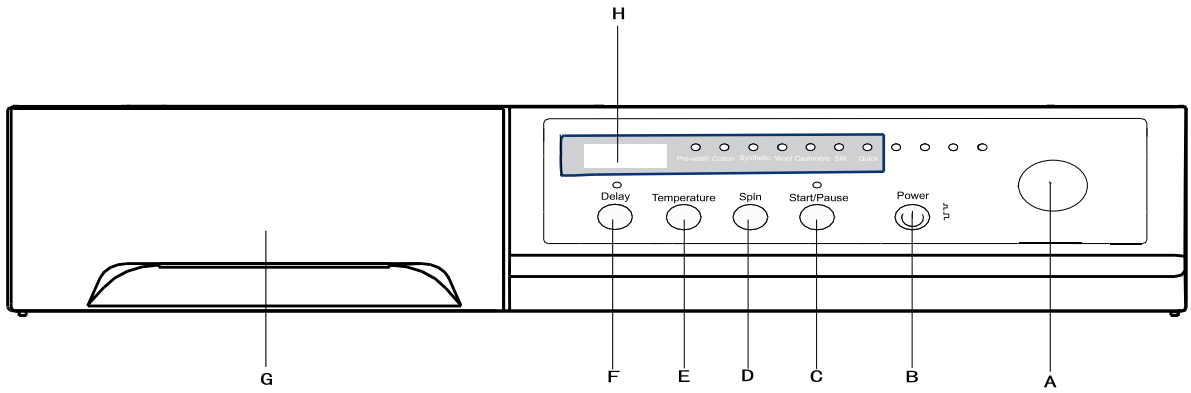
Net Dimension

height: 850mm / width: 595mm / depth: 565mm

Name of the parts



Opertional Functions



A Wash programming knob

By turning the knob clockwise/counterclockwise, the required program can be selected. There are 11 programs available. After a program is selected, the corresponding light will go on. (Refer to Guide to Operational Program Selection).

B Power Switch

Press this button to switch on the washing machine. Press it again to switch it off.

C Start / Pause Button

When the washing machine is connected to the power socket and a program is selected, washing operation will start. Lightly touch this button during a wash cycle, operation will stop and the digits on the screen start blinking. Touch it again to resume operation. To cancel a wash program during a wash cycle, touch this button, when the digits on the screen start blinking, press the Power switch, the program will be cancelled.

D: Spinning Speed Setting Button

Touch this button lightly to select the desired speed. When a speed is set, it will be displayed on the screen.

Note: Different water temperatures and spinning speeds can be set for different laundries. Refer to the operation instructions on pages 11 and 14. Wash using the default settings if there is no special requirement.

E: Washing temperature button

Touch this button lightly, the washing temperature will be displayed on the screen. Select a temperature according to the type of laundry.

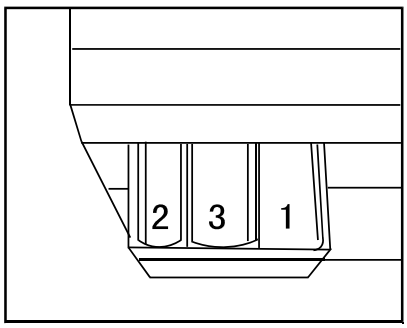
Functions

F: Delay Button
Touch this button lightly, the washing machine will start operation after a period of time and the corresponding indicator will go on. The range is 0.5-24 hours; each touch of this button increases a half hour. After the button is set, press the Start/Pause button to start countdown of the set time (the time is displayed on the screen until the program ends).

E+F Key Combination (After you press the Start/Pause button ,the E+F Key Combination is available)
Press these two keys simultaneously, the sign "LOCK" and the remaining washing time are displayed on the LED alternately. Now all the function keys except the Power switch can be locked. Press the key combination again to cancel this function.

G: Detergent distribution drawer
Open the drawer, three compartments can be seen:

Compartment 1: Pre-wash detergent
Compartment 2: Normal - Quick wash detergent
Compartment 3: Softener, conditioning agent, perfume, etc.



H: Display
Such information as remaining wash time, temperature and speed setting and error messages will be shown.

Note: After power is switched on, the display will go on and the remaining wash time decreases. As the water pressure and temperature may differ, the remaining time may be adjusted accordingly. When the laundry is not balanced during spinning, the time may be automatically prolonged. These are normal phenomena.

Program description table

Program	Recommended Laundry	Temperature	Detergent		
			1	2	3
Prewash	Heavy-soil laundry	Cold -30- 40-60 -80	★	★	○
Cotton	Cotton fabrics	Cold -30- 40-60 -80	×	★	○
Synthetic	Fast-color synthetic	Cold -30- 40-60	×	★	○
Wool	Woolen fabrics	Cold -30-40	×	★	○
Cashmere	Cashmere fabrics	Cold -30-40	×	★	○
Silk	Silk fabrics	Cold -30-40	×	★	○
Quick	Medium-soil laundry	Cold -30-40	×	★	×
Wash	Medium-soil laundry	Cold -30- 40-60	×	★	×
Rinse	Medium-soil laundry	/	×	×	○
Spin	/	/	×	×	×
Drain	/	/	×	×	×

Note: "○ " indicates that softener can be added if needed;
"★ " indicates that detergent must be added;
" X " indicates that detergent must not be added.

1) The wash temperature refers to the maxinum temperature.
2) The wash cycle times are intended as a guide only.The actually used time may vary due to different water pressure ,initial water temperature,etc.

Error Display and Troubleshooting

Error message:Door is not properly shut 20s after program is started.

Troubleshooting:

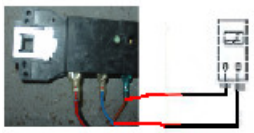
Pushing the door to Check Whether Door is properly shut or not

N → Shut the door properly.

Y

Cut off the power and then turn on again. Check the voltage between brown wire and blue wire of door lock, is it between AC 220-240V?

220-240v



Y → Door lock is broken and need replacing, then make sure wire is connected properly.

N

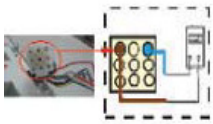
Check if the wire connecting door lock and PCB is loose

Y → Connect the wire properly

N

Check the voltage between brown wire and blue wire of PCB, is it between AC 220-240V?

220-240v



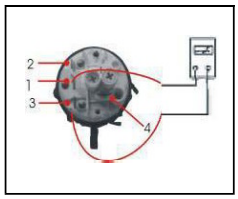
N → Replace PCB

Error message:Drainage error, water not emptied within 4 min.

Troubleshooting:

Check if water is emptied

Y → Cut off power and water level pressure switch wire connection, measure the resistance of 1 and 3 pin, is it infinite? If not, it is water level pressure switch failure and replace it. If it is, then repair and check PCB and wire as followed.



N

Check if drain pump acts by touching pump position

Y → Check if drain pump or drain pipe is jammed, and open the filter and clean

N

Cut off the power and choose spin program to start, then check the import voltage of drain pump, is it between AC 220-240V?

Y → Replace drain pump

N

Cut off power and pull out water level pressure switch wire connection. Set spin program to start. Check the export voltage to drain pump, is it between AC 220-240V?

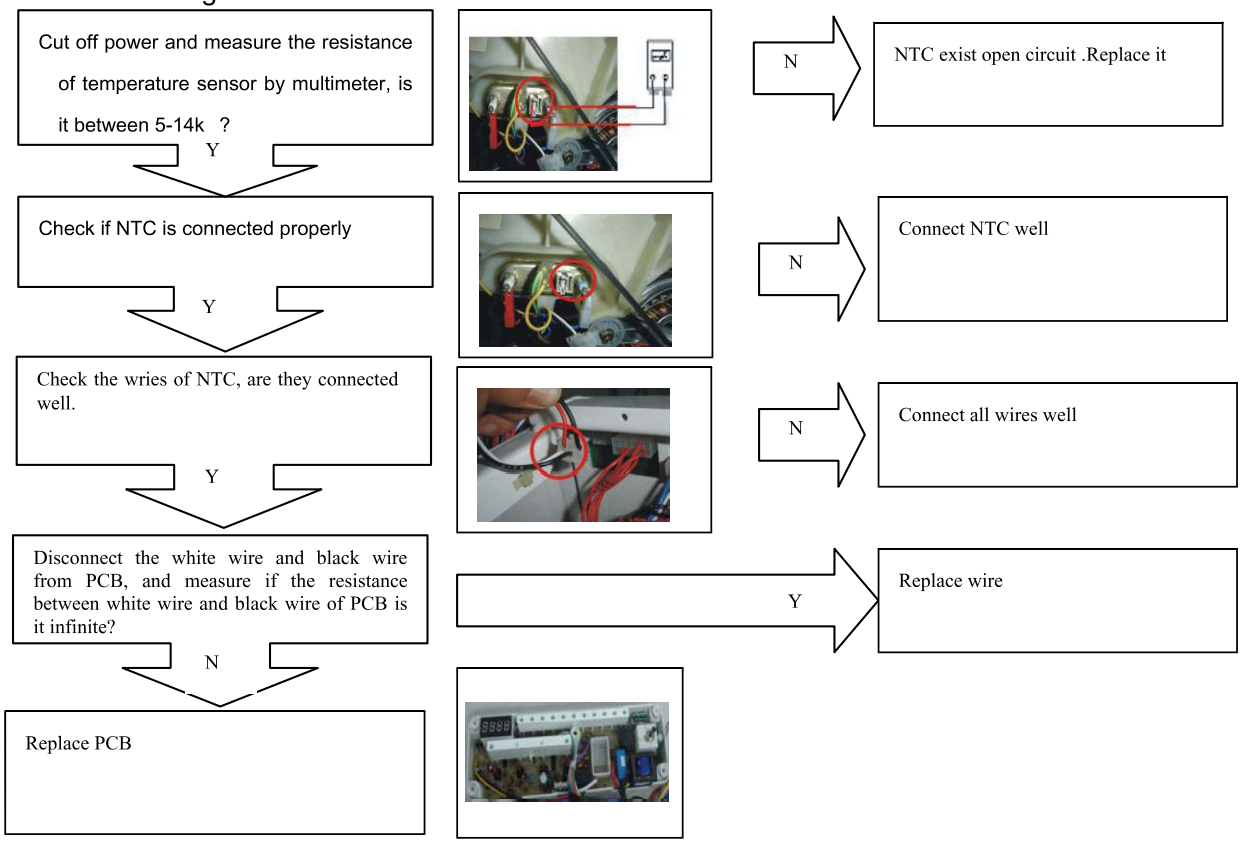
Y → The wire between PCB and drain pump is not connected properly. Replace the wire.

N

Replace PCB

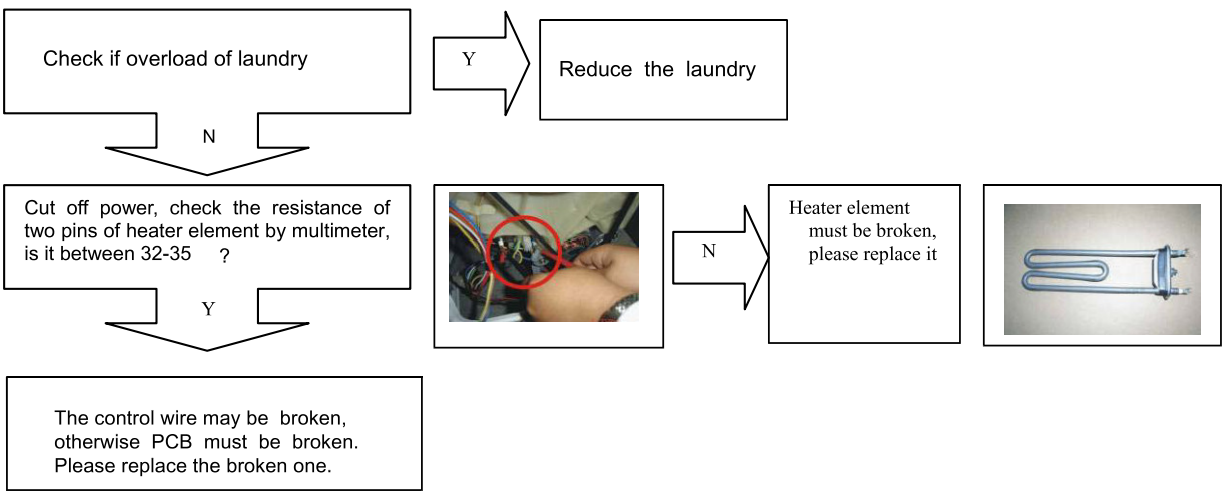
Error message:Temperature sensor is not properly connected or damaged (display at the end of a program).

Troubleshooting:


Cut off power and measure the resistance of temperature sensor by multimeter, is it between 5-14k ?
Y
N
NTC exist open circuit .Replace it
Check if NTC is connected properly
Y
N
Connect NTC well
Check the wries of NTC, are they connected well.
Y
N
Connect all wires well
Disconnect the white wire and black wire from PCB, and measure if the resistance between white wire and black wire of PCB is it infinite?
Y
Replace wire
N
Replace PCB

Error message:The heater may be broken

Troubleshooting:


Check if overload of laundry
Y
Reduce the laundry
N
Cut off power, check the resistance of two pins of heater element by multimeter, is it between 32-35 ?
Y
N
Heater element must be broken, please replace it
The control wire may be broken, otherwise PCB must be broken. Please replace the broken one.

Error message:The required water level is not reached within 8 min

Troubleshooting:

Check if water is leaking from washer bottom. inlet pipe. drain pipe or other pipe connection

Y → Readjust or replace the broken parts

N

Check if tap is closed or water pressure is too low (usual between0.03-1 MPa)

Y → Open the tap or wait for normal water pressure to use

N

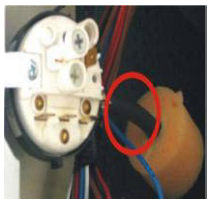
Check if inlet valve is jammed

Y → Clean inlet valve

N

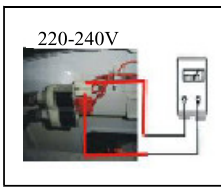
Draw out the dispenser and check if water is entering

Y → Observe if the height of drain pipe not reach 80 cm. If water level pressures switch and the hose is leaking gas



N

Turn on power, and set pre-wash mode, then start. Check the import voltage of electromagnetic valve by multimeter , is it between AC 220-240V?



Y → Electromagnetic valve must be broken, please replace it.

N

Check if export voltage from PCB to electromagnetic valve, is it between AC 220-240V?

Y → The wire connected PCB and inlet valve is not properly. Please reconnect it or replace it.

N

Replace PCB

Error message. Motor overheat protection or damaged.

Troubleshooting:

Cut off power and check if motor wires are connected well

Y

Measure if resistance of motor winding by multimeter, is it as followed?

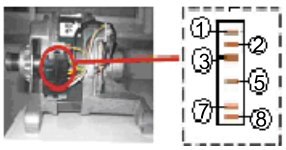
1-2(between white and white):5
3-5(between brown and red):3.4
7-8(between grey and black): 4 0

Y

Pull out the wire connection of motor Then check if circuit is open by multimeter

N

Reconnect well



N

Put the motor in normal temperature about ten minutes, and then test again. If the resistance is natural, it is caused by overheated protection. Then check and deal with overload, abnormal voltage. If not, please replace motor

Y

Repair wires

Error message. Water level exceeds protective value.

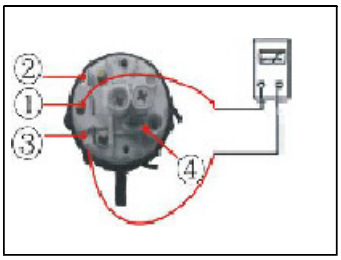
Troubleshooting:

Check if water switch hose and air collector are jammed

Y → Clean water switch hose and air collector

N

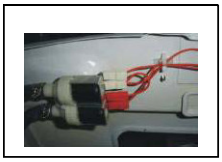
Pull out water switch inserts and turn on power, then set wash mode. While water is entering at the position of 1/4 glass window, check the resistance between and , is it 0? Check the resistance between and , is it infinite?



Y → Replace water pressure switch

N

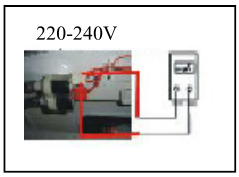
Without power ,connect inlet pipe to inlet vavle,then open the tap and observe if water is entering in dispenser



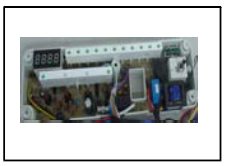
Y → Replace inlet valve

N

Without starting but electrifying, measure the import voltage of inlet valve, is it between AC 220-240V?



Y → Replace PCB



Examination & Troubleshooting

Failure:Display nothing

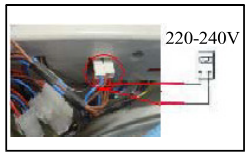
Troubleshooting:

Measure the power supply ,is it exists 220V-240V AC voltage
- N → Repair power supply
- Y

Is power switch on?

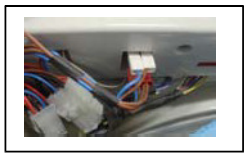
- N → Press the power switch
- Y

Press power switch and check the voltage between two pins of power switch. Is there 220-240V AC voltage?



- N → Make sure power supply cable assembly is connected well and then replace power switch.
- Y

Cut off power and check if plugs are connected well by pulling the plug of PCB.



- N → Insert the plug well and test
- Y

Check if power plug exists 220V-240V AC voltage at the import pin

- N → Replace PCB

Failure:no water inletting

Troubleshooting:

Is the tap shut off or the water pressure too low?

- Y → Open tap or wait for normal water pressure
- N

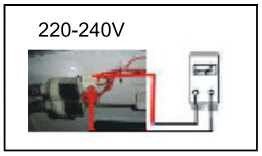
Check if water is leaking from washer connection, especially between inlet pipe and tap. to make sure of no bends.

- Y → Reconnect inlet pipe.
- N

Check if filter of electromagnetic valve is jammed

- Y → Clean filter
- N

Choose pre-wash program and start Check if there is 220-240V at import pin of electromagnetic valve

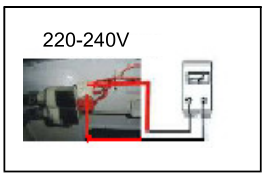


- Y → Replace electromagnetic valve
- N

Is there open circuit between electromagnetic valve

- Y → Reconnect the wire
- N

Choose pre-wash program and start then check if there is 220-240V at export pin of electromagnetic valve



- N → Replace PCB

Failure:no draining
Troubleshooting:

Is the height of drain pipe too high?
- Y → Adjust the height of drain pipe to 80-100 cm
- N ↓

Turn filter anticlockwise open and check if filter is jammed

- Y → Clean and tighten filter clockwise.
- N ↓

Check if hose connecting cylinder to pump is bent or jammed
- Y → Arrange hose and clean
- N ↓

Turn on power and choose spin program to start. Measure if import voltage of drain pump is 220-240V

- Y → Replace drain pump
- N ↓

Cut off and check if the connection between drain pump and PCB is open
- Y → Replace the wire.
- N ↓

Turn on and choose spin program to start. Measure if export voltage of PCB to drain pump is 220-240 V
- N → Replace PCB

Failure :abnormal noise and vibration
Troubleshooting:

Is the pack screws dismantled?
- N → Dismantle the screws
- Y ↓

Is there foreign material in the washer?
- Y → Clean
- N ↓

Is washer in balance?
- Y → Adjust adjustable feet
- Y ↓

Is belt loose or worn?
- Y → Replace it
- N ↓

Are the screws of counterweight and motor loose?
- Y → Fasten them
- N ↓

Remove belt and turn belt pulley by hand, and then check if there is different
- Y → Dismantle triangle and check the bearing .If it is broken, replace it.
- N ↓

Turn on power and set spin program, then start check if there is different noise from motor
- Y → Replace motor

Failure:water leaking

Troubleshooting:

Check if water is leaking from the inlet pipe or the tap

Y → Readjust it.

N

Is drain pipe broken

Y → Replace drain pipe

N

Check if there is foreign material nipped between cushion of sight window and sight window

Y → Remove clothes

N

Check if all tubes and tie-in is leaking water, including the connecting of tube and valve, dispenser, tube and dispenser ,outer cylinder-cushion of sight window-hose and outer cylinder, drain pump and gas valve

Y → Reassemble or repair

N

Is cushion of sight window broken?

Y → Replace cushion of sight window

N

Is water leaking from outer cylinder?

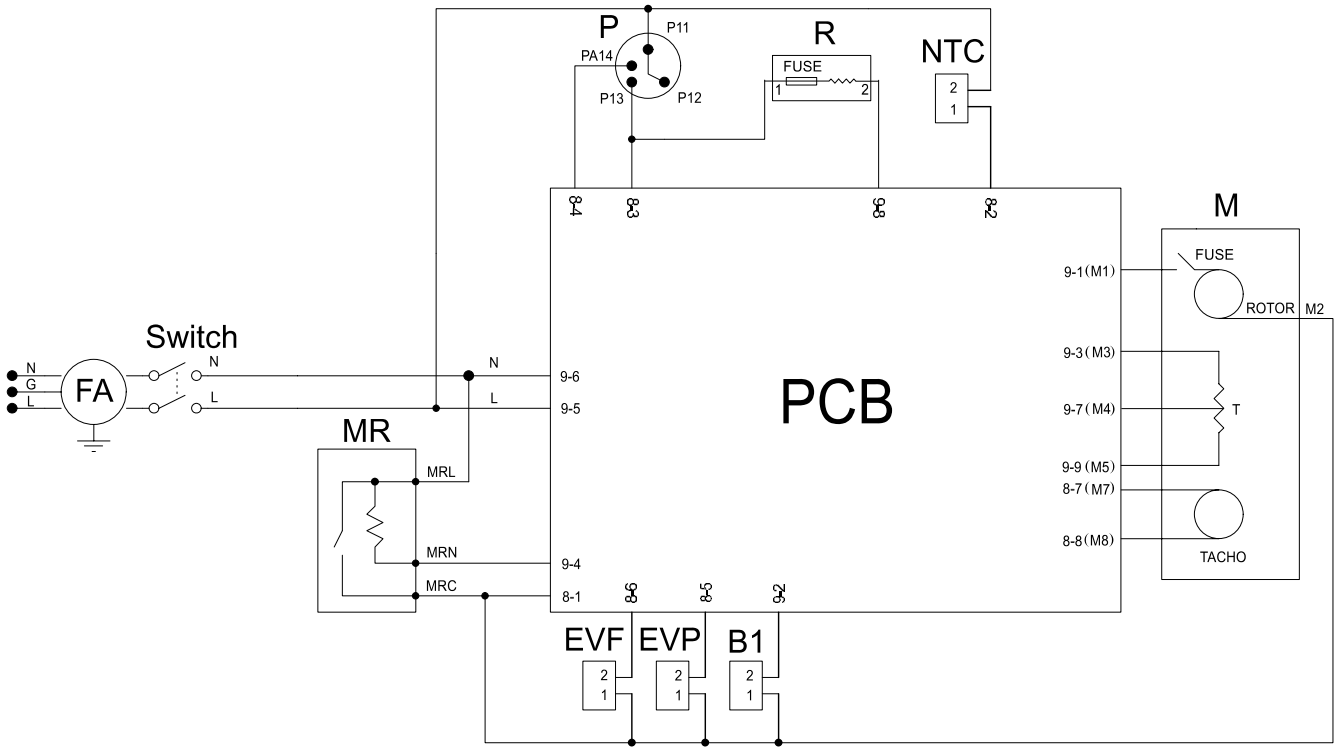
Y → Replace outer cylinder

NOTE:

1. If you want to stop the program setting,At first, you should press the button of start/pause only one time.Then turn off power, If you want to start the program setting again,you should turn on the power again,so it is ok.
2. Switch on the power, turn the program botton at "drian" position, press the "temperature" and "start" buotton at the same time. Machine will start a self test program

1) When the door switch is closed for ten seconds, 88:88 will be displayed.
2) When the main wash valve allows water to let in for 3 seconds, 77:77 will be displayed.
3) When the pre-wash valve allows water to let in for 3 seconds, 77:77 will be displayed.
4) When the hot water valve allows water to let in for 3 seconds, 77:77 will be displayed.
5) When the main wash valve, the pre-wash valve and and also the hot water valve allow water to let in for 3 seconds at the same time, 77:77 will be displayed.
6) When the motor runs for ten seconds with the spin speed 93rpm, 66:66 will be displayed.
7) When the motor runs for 50 seconds with the spin speed 800rpm, 66:66 will be displayed.
8) When the main wash and pre-wash allow the water to go in meanwhile until the maxim water level, 55:55 will be displayed.
9) When the water fills the tub fully, it will stop for ten seconds and at this time 55:55 will be displayed.
10) When the motor runs clockwise for 15 seconds with 50 rpm, the washing machine will stop for 5 seconds and at this time 44:44 will be displayed.
11) When the washing machine heats water for 10 seconds, 33:33 will be displayed.
12) When the washing machine drains for 30 seconds, 22:22 will be displayed.
13) When a program cycle is finished, END will be displayed.

Wiring Circuit



PCB-Printed Circuit Board

FA-Interference Suppresser

Switch-Power Switch

P-Pressure Switch

R -Heating element

NTC-Temperature Sensor

MR-Door Lock

EVP,EVF-Water Inlet Magnetic Valve

B1 -Drainage Pump

M-Motor

END